

Opastop Type GP2000H

Continuous dust concentration or smoke number monitoring equipment.

- A modulated light source emits a conical light beam at constant frequency and amplitude in the measuring zone A.
- A receiver intercepts the light reflected by the dust particles in the flue gas, and an electronic filter circuit eliminates the effects of parasitic light sources, such as daylight.
- Light reflection is a complex phenomenon depending particularly on the angle between the incidence and the diffusion of the light, the wave-length of the light and the form of the particles suspended in the gas stream. Basically, the varying intensity of reflected light is a direct function of the dust concentration.
- The cell converts the light flux into an electrical signal which can be recorded. An in-situ calibration by comparison to a reference method is necessary.

Very high sensitivity:

The principle of measuring the light reflected from dust particles in the flue gas results in the detector receiving very little light when the flue gas is clean. A slight increase in dust concentration produces a high relative variation in the detected light. This technique is the opposite of that used in equipment operating on the extinction principal.

Insensitive to misalignment:

Conventional apparatus based on the extinction principle are very sensitive to flue distortions. The OPASTOP GP 2000 H overcomes this problem by having the transmitter and receiver on the same support mounting plate.

Insensitive to flue vibrations:

The use of optical fibre transmission allows the electronic control to be mounted away from detector on the flue.

Ease of installation:

The detector mounting plate which is fixed on the flue needs only a single hole and requires no particular precautions as to alignment or clearance. Access is only required on one side of the flue or stack.

Measurement principles:

- One control box, housing the light source, the measuring cell, and the electronic circuitry.
- One detector mounting plate situated on one side of the flue. (in France the detector is to be installed in compliance with standard NF X 44052).
- Two optic fibres :
 - one emitter
 - one receiver
- One calibration test bloc. This device enables the calibration of the OPASTOP GP 2000 H to be checked whenever necessary.

Technical features:

- Enclosure IP 65, epoxy painted, delivered with canopy.
- Dimensions : 200 x 400 x 500 mm - Weight 18 kg.
- Fibre optic cable : 1.20 m long (other lengths on request).
- Accessories and support bracket in 316 L stainless steel.
- Power supply : 110 V / 220 V, 50/60 Hz.
- Power consumption : 100 VA.
- PLC electronic circuitry.
- Self-check shutter system by step by step motor, quartz driven.
- Local read-out of signal intensity and faults.
- Outlet signal :
 - analog 4-20 mA on 750
 - RS 232 C 9 600 BPS (8 bits information, 1 bit stop) for FX 80 type printer.
- Possibility to print the following parameters :
 - Alarm threshold
 - Excessive temperature
 - Projector failure
 - Shutter failure
 - Operating time percentage for the OPASTOP GP 2000 H
 - Average hourly dust concentration
 - Average daily dust concentration
 - Automatic checking of the electronic circuitry (the output signal is continuously registered during checking)
- Alarm output signal when exceeding opacity level (potential free change-over contact 1.5 A.)
- Alarm output signal for main failure (potential free change-over contact 1.5 A.)
- Maximum operating temperature : flue gas at 350° (400° peak)

Optional:

- Special detector available for temperature above 350° C
- Calibration test unit